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ABSTRACT

The impact of a Learning Assistance Center (LAC) program on the achievement and retention of disadvantaged students at a predominately Hispanic institution was evaluated over a two-year period. Tutoring was limited to freshmen and sophomores in the general subject areas of English, mathematics, biology, chemistry, and social studies. Trends for four semesters were compared for LAC and non-LAC students for 10 background variables. Students from the two groups were matched to examine overall and semester grade point average (GPA) as well as grade distribution percentages between non-LAC and LAC students. The retention rate for LAC students was 15.6% higher than for similar non-LAC students. It was also found that semester and cumulative GPAs of LAC students as compared to non-LAC "similar" students were essentially the same; and LAC students had a higher GPA in LAC tutored courses than non-LAC students for the same courses. Since LAC students performed better in their tutored courses and yet had the same GPAs as their similar counterparts, the results suggest that LAC students did not perform as well as their counterparts in nontutored services. This conclusion also implies that LAC tutoring assistance may not be transferable to other courses. (SW)

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IMPACT OF A COLLEGE LEARNING ASSISTANCE CENTER ON THE ACHIEVEMENT AND RETENTION OF DISADVANTAGED STUDENTS

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Impact of a College Learning Assistance Center on the Achievement and Retention of Disadvantaged Students

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ABSTRACT

College Learning Assistant Centers are a vehicle for assisting disadvantaged students in order that they can acquire and develop academic skills necessary for successful college work. The effectiveness of such Centers is uncertain because of the paucity of relevant articles and experimental studies.

This study investigated the impact of one Learning Assistance Center (LAC) program on the achievement and retention of disadvantaged students at a predominately Hispanic institution. Relevant findings were the following: (1) semester and cummulative grade point averages of LAC students as compared to non-LAC "similar" students are, for practical considerations, the same; (2) LAC students have a higher grade point average in LAC tutored courses than non-LAC students for the same courses; and, (3) the retention rate for LAC students is 15.6% higher than for "similar" non-LAC students. Results (1) and (2) have raised questions as to the transferability of what is learned through participation in an LAC program and the dependence of students on LAC services.

INTRODUCTION AND PROBLEM

Institutions of higher education are faced with many difficult decisions as to how to best husband their resources in order to provide a quality education while at the same time providing an opportunity to educate as many people as possible who desire college training. In particular, minority institutions with "open admissions" policies are confronted with the greatest challenges of all in regard to this problem.

One possible solution has been to provide a Learning Assistance Center (LAC) program to assist high-risk students in acquiring and developing academic and personal skills necessary for successful college work. Generally a center supports a university's academic program by offering supplemental learning activities designed to reinforce and complement instruction provided by university faculty. LAC's provide counseling services, instructional or tutorial support, curriculum innovation, and academic and career advisement.

The program under investigation was typical of the services provided in other programs (ETS, 1975: Lopez, 1979: Romano, 1980: Martin & Blanc, 1981). Tutorial activities were designed to assist students on an individual or small group basis with the objective of improving grade point averages and consequently student retention

rates. Tutoring was limited to the lower division level (freshmen and sophomores) in the general subject areas: English, math, biology, chemistry and social studies. Student participation in the LAC program was based on recommendations from academic counselors during freshman orientation, as well as referrals from faculty; however, any student who wished LAC assistance was allowed to participate.

A review of relevant bibliographic literature concerning learning centers for high-risk students produced no conclusive results as to the academic benefits of such programs. Most studies are descriptive in nature and therefore do not encompass objective evaluation procedures (Christ, 1981: Moore-Egman, 1981: Zanoni, 1980). The scarcity of studies regarding achievement outcomes suggests either poor results for such programs or possibly the lack of experimental research in these areas. These conclusions were first verified in 1975 by a comprehensive study on higher education service programs for high-risk students prepared for the U.S. Office of Education by the Educational Testing Service (ETS, 1975). The primary benefits from tutorial programs have been in the areas of self-esteem and attitude rather than academic achievement (Kelly and Nolan, 1980: Valenzuela-Smith, 1983).

This paper presents an evaluation of the academic effectiveness of an LAC program. In particular, this study performed an experimental evaluation of a learning assistant center at a predominantly Hispanic institution to determine if LAC services influenced the academic achievement and, consequently, the retention of the high-risk students served. Information received from this study was used as documentation for future funding of the LAC program. The evaluation was over a two-year period which was the same time period the LAC program had been in existence at the University.

Based on the concern expressed in the literature review as to the academic effectiveness of an LAC program and in consultation with the directors, staff and students of the LAC, the most critical questions to be addressed by the study were identified:

1. Is there a difference in the achievement level, as measured by grade- point-average, between "similar" students who are and who are not served by the LAC tutorial program?

2. Is there a difference in the number and percent of passing and failing grades in lower division level courses among "similar" students who are and who are not served by the LAC tutorial program?

3. To what degree have LAC services contributed to the retention of students?

METHODOLOGY

The methodology entailed usage of population data; that is, no samples were taken. The plan was to analyze the total LAC group in comparison to the rest of the student body; that is, a comparable non-LAC population.

There were three reasons for this appproach:

1. It was suspected that the difference in LAC and non-LAC evaluation criteria may be small. Therefore, by taking samples instead of evaluating the entire population, small differences may not be detectable. If a population is used, any differences detected are absolute differences, not probabalistic differences. Therefore, the analyses of the census data are more sensitive because of the lack of sampling error.

2. In some of the detailed analyses a sample could have generated such small frequencies that meaningful results would have been unlikely.

3. The most important reason centers on the questionable nature of and the difficulty in indentifying the data base. In order to sample, one must sample from a valid population, and the only way to validate the population for this study was to build a data file which produced all the relevant data. Because of the large number of students in each group (population data), no test for statistical significance was made on any of the group comparisons. Consequently, group comparisons were based on practical significant differences rather than statistical significant differences. Any statistical inferential tests would have resulted in significant differences because of the unusually large group sizes.

The analysis, done on a semester by semester basis to observe trends, contained two steps. First LAC students were compared to non-LAC students on ten relevant variables: ACT total scores, ethnicity, family income, handicaped or disabled indicator, English spoken at home, hours working per week, major, minor, sex, and student classification. This comparison was used as a basis for identifying discriminating variables between LAC and non-LAC student groups in order to control for differences between groups. If LAC students were characteristically the same as non-LAC students, then no matching group need be created. However, some differences were apparent and a matching non-LAC group was created.

The non-LAC students as compared to the LAC students were significantly higher in percentage of freshman and sophomores, (see table 1) significantly higher in percentage of Spanish surnamed students (see table 2), and significantly lower on the composite ACT test (see table 3). Additional analyses revealed either no differences between LAC and non-LAC students on the remaining

Table 1

Student Classification Percentages
By NON-LAC and
LAC

NON-LAC

Semester (enrollment)	Beginning Freshman	Freshman	Sophomore	Junior	Senior
1st Fall (N=5226)	21	27	20	16	16
1st Spring (N=5508)	7	34	22	18	20
2nd Fall (N=5867)	16	29	21	16	17
2nd Spring (N=5919)	8	35	23	17	17
Summary	13	31	22	17	18

LAC

Semester (enrollment)	Beginning Freshman	Freshman	Sophomore	Junior	Senior
1st Fall (N=723)	44	28	16	7	5
1st Spring (N=888)	10	48	24	12	6
2nd Fall (N=1008)	41	24	21	9	6
2nd Spring (N=873)	18	42	19	10	11
Summary	28	35	20	10	7

Table 2

Ethnicity
by NON-LAC and LAC

Semester	NON-LAC % Spanish Surname	% American Caucasian	Other
1st Fall (N=5226)	74	24	3
1st Spring (N=5508)	73	24	3
2nd Fall (N=5867)	75	21	4
2nd Spring (N=5919)	75	21	4
Summary	74	22	4

	LAC % Spanish Surname	% American Caucasian	Other
1st Fall (N=723)	86	11	2
1st Spring (N=888)	82	14	4
2nd Fall (N=1008)	80	16	4
2nd Spring (N=873)	83	12	5
Summary	82	13	4

Table 3

Composite ACT Scores
by NON-LAC and LAC

Semester	NON-LAC Mean	NON-LAC Median	NON-LAC Standard Deviation
1st Fall (N=5226)	15	14	5
1st Spring (N=5508)	15	14	5
2nd Fall (N=5867)	14	14	5
2nd Spring (N=5919)	14	13	5
Summary	14	14	5

	LAC Mean	LAC Median	LAC Standard Deviation
1st Fall (N=723)	12	12	4
1st Spring (N=888)	12	12	4
2nd Fall (N=1008)	13	12	4
2nd Spring (N=873)	12	12	4
Summary	12	12	4

variables investigated or differences that were significantly less than those observed in the above tables.

Step two of the analysis was the matching of LAC students with similar non-LAC students. Two matches were made. One created a non-LAC matching population for each of the four semesters investigated. Students from the LAC group were matched one-to-one with students from the non-LAC group based on ACT composite score, ethnicity, and student classification. The second match created a non-LAC population for each semester for each course for which tutoring was provided. Matching variables in this case were also ACT composite score, ethnicity and student classification. The first match was designed to examine overall and semester GPA and the second to compare grade distribution percentages between non-LAC and LAC served students.

Other variables considered as criteria for matching were family income, physical handicap or disability status, hours expected to work, and English as first language spoken at home. Unfortunately there were insufficient data for matching on these variables. The variables selected for the first match were based on differences observed between LAC and non-LAC students from the descriptive data analysis as presented in tables 1, 2 and 3.

When matching by course, it is probable that the same LAC student would appear in more than one course. While this repetition lends itself to course analysis, computation of overall GPA for a semester would be distorted by counting some students and their matches more than once. For this reason a separate match was made by semester in which each LAC student and his match appear only once. This approach allowed more accurate GPA comparison by avoiding multiple counting.

Tables 4 and 5 are the results of the first match. Cumulative GPA differences between LAC and non-LAC were very small. Differences in semester GPA's were also very small, although they do slightly favor the LAC. In summary, for practical considerations cummulative and semester GPA's for the LAC and non-LAC can be considered the same. It was possible to find a match for about 85 percent of the LAC students in the non-LAC population for each semester.

The second match by ACT composite score, ethnicity and course provides for comparisons of grade distribution percentages between LAC to non-LAC students. These results are presented in Table 6. Tutored courses were selected on the basis of 25 or more LAC students per semester per course. Totals illustrate the LAC population has 5.6 percent less failures than the comparable non-LAC population. Other percentage differences in grades slightly favor the LAC in all grade classifications.

Table 7 shows a 15.6 percent higher retention rate for LAC over the non-LAC matched population suggesting that a significant number of students are encouraged to remain in college in an attempt to develop the academic skills necessary for a successful college career. These conclusions are based on the assumption that the number of transfer-out students are the same for the non-LAC as the LAC students with similar backgrounds.

Table 4

MATCHED POPULATION[1]-CUMULATIVE GPA
BY NON-LAC AND
LAC

	NON-LAC		
Semester	Mean	Median	Standard Deviation
1st Fall (N=630)	1.87	1.98	0.90
1st Spring (N=734)	1.96	2.02	0.87
2nd Fall (N=847)	1.90	1.99	0.89
2nd Spring (N=758)	1.98	2.04	0.91
Summary	1.93	2.01	0.89

	LAC		
Semester	Mean	Median	Standard Deviation
1st Fall (N=630)	2.00	2.05	0.74
1st Spring (N=734)	1.96	2.01	0.72
2nd Fall (N=847)	1.95	2.00	0.81
2nd Spring (N=758)	1.92	2.02	0.80
Summary	1.96	2.02	0.76

[1]Matched Populations - LAC students matched with Non-LAC students on ACT composite, ethnicity, and student classification.

Table 5

MATCHED POPULATION[1] Semester GPA BY NON-LAC AND LAC

Semester Enrollment	NON-LAC Mean	Median	Standard Deviation
1st Fall (N=630)	1.81	1.91	1.04
1st Spring (N=734)	1.84	2.00	1.14
2nd Fall (N=847)	1.80	1.95	1.06
2nd Spring (N=758)	1.90	2.01	1.18
Summary	1.84	1.97	1.11

Semester Enrollment	LAC Mean	Median	Standard Deviation
1st Fall (N=630)	1.95	2.01	0.86
1st Spring (N=734)	1.95	2.02	0.90
2nd Fall (N=847)	1.90	1.99	0.92
2nd Spring (N=758)	1.92	2.01	0.98
Summary	1.93	2.01	0.91

[1]Matched Population - LAC students matched with Non-LAC students on ACT composite, ethnicity, and student classification.

Table 6

Matched Population[1] Two-year Summary
of Grade Percentages for LAC Tutoring Sevices
by NON-LAC and LAC (N=2969)

	NON-LAC						
Grades	A's	B's	C's	D's	F's[2]	Drops[3]	Incompletes
Percentages	5.0	16.6	26.1	15.0	21.4	15.2	2.4

	LAC						
Grades	A's	B's	C's	D's	F's[2]	Drops[3]	Incompletes
Percentages	5.7	18.7	29.8	15.5	15.8	14.5	3.2

[1]LAC students matched with Non-LAC students on ACT composite, ethnicity, student classification and course.
[2]Includes F's, DF's, WF's
[3]Includes DR's, DP's, W's, and WP's

Table 7

MATCHED POPULATION[1] RETENTION RATE BY NON-LAC AND LAC

NON-LAC

Semester of Entry[2]	Number Entering	Number Remaining End 2nd Spring	% Remaining End 2nd Spring
1st Fall	677	284	41.9
1st Spring	256	95	37.1
2nd Fall	744	607	81.6
TOTAL	1677	986	58.8

LAC

Semester of Entry[2]	Number Entering	Number Remaining End 2nd Spring	% Remaining End 2nd Spring
1st Fall	439	258	58.8
1st Spring	256	72	67.3
2nd Fall	464	421	90.7
TOTAL	1010	751	74.4

[1]Matched Population - LAC students matched with Non-LAC students on ACT composite, ethnicity and student classification.

[2]Semester of Entry - Based on Beginning Freshman only.

CONCLUSIONS AND RECOMMENDATIONS

The analysis section revealed the following information concerning the achievement of LAC students: (1) the retention rate for LAC students, based on a two year analysis, is almost 16 percent higher than for the matched non-LAC group. Additional research in the form of a follow-up of these two groups until graduation would be necessary before conclusive results could be stated concerning what impact the LAC has on increasing the number of degrees earned. (2) Cumulative and semester GPA's of LAC students and matched non-LAC students are essentially the same. (3) LAC students had higher GPA's in LAC tutored courses than did the matched non-LAC group. Since LAC students performed better in their tutored courses and yet had the same cummulative and semester GPAs as their similar counterparts, results (2) and (3) suggest that LAC students did not perform as well as their counterparts in non-tutored courses. Perhaps the LAC students became highly dependent on LAC services. This conclusion also implies that LAC tutoring assistance may not be transferable to other courses. Other possible explanations exist; however, the above conclusions seem tenable.

Recommendations for future studies and their facilitation include arrangements with the American College Testing Program to obtain complete and accurate student profile information, accurate documentation of University data bases, and a detailed analysis of the LAC to determine what specific tutorial services works best.

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